

WHAT IS CLAIMED IS:

1. A method for processing and outputting video frames comprising:
receiving a stream of video frames;
inserting geo-location data into a video frame to generate a modified video frame; and
outputting the modified video frame.
2. The method of Claim 1, comprising:
receiving the geo-location data, wherein the geo-location data inserted into a particular video frame is based on the geo-location data of a scene in the particular video frame.
3. The method of Claim 1, wherein a time tag is also inserted into the video frame.
4. The method of Claim 1, wherein the stream of video frames are received from an unmanned aerial vehicle.
5. The method of Claim 1, comprising:
receiving commands for a fire control radar system; and
transmitting the commands to an unmanned aerial vehicle.
6. The method of Claim 1, comprising:
storing the stream of video frames along with the associated geo-location data.
7. The method of Claim 6, comprising:
searching the stored geo-location data to identify geo-location data satisfying criteria specified in at least one search command; and
transmitting the identified geo-location data and video frames corresponding to the identified geo-location data.

8. The method of Claim 6, wherein the time tags associated with the video frames are stored along with the geo-location data.

9. The method of Claim 8, wherein the stream of video frames are captured by a first aerial vehicle, the geo-location data and the time tags are determined by a second aerial vehicle, and sensor data from the first and second aerial vehicles are stored along with the geo-location data and time tags.

10. The method of Claim 9, wherein the sensor data identifies objects in a particular video frame.

11. The method of Claim 10, wherein the identified objects are vehicles or buildings.

12. The method of Claim 8, comprising:
generating an index using the geo-location data and the time tags; and
searching the index based on the geo-location data or the time tags, wherein the outputted modified video frames are those video frames which are associated with the searched for geo-location data or the time tags.

13. The method of Claim 1, wherein the stream of video frames are captured by a first aerial vehicle and the geo-location data is determined by a second aerial vehicle.

14. The method of Claim 13, wherein the determination of the geo-location data comprises:
determining a distance between a scene in a particular video frame and the second aerial vehicle; and
determining an azimuth, elevation, orientation and position of the second aerial vehicle, wherein
Global Positioning Satellite (GPS) signals are employed along with the distance, azimuth, elevation, orientation and position to determine the geo-location data.

15. The method of Claim 1, wherein the geo-location data is inserted into a visible portion of the video frame.

16. The method of Claim 1, wherein the geo-location data is inserted into a non-visible portion of the video frame.

17. The method of Claim 1, wherein the geo-location data is determined by using an aircraft's true inertial space position as a reference and the gimbals/sensor azimuth and elevation angles combined with range to a target of interest in the video frame.

18. The method of Claim 1, wherein the geo-location data is determined by gimbal scanning to form video frames from different aircraft positions and aspect angles.

19. The method of Claim 1, wherein the modified video frame is output onto a computer generated terrain map of a region of interest such that the modified video frame and any targets of interest are located within a proper geo-location within the displayed terrain map.

20. A system comprising:
an antenna which receives a stream of video frames;
a processor which inserts geo-location data into a video frame to generate a modified video frame; and
an output for outputting the modified video frame.

21. The system of Claim 20, wherein the antenna is a linear taper antenna.

22. The system of Claim 21, wherein the antenna is arranged to receive and transmit radar signals.

23. The system of Claim 20, comprising:

a transmitter connected to the output for transmitting the modified video frame.

24. The system of Claim 20, comprising:
a memory for storing the video frames along with associated geo-location data.

25. The system of Claim 24, wherein the processor indexes the geo-location data, searches the geo-location data based on a search input, and the output modified video frame is a video frame corresponding to the search input.

26. The system of Claim 24, wherein the memory also stores time tags and sensor data associated with each of the video frames, and wherein the processor indexes the geo-location data, searches the geo-location data, the time tags and/or the sensor data based on a search input, and the output modified video frame is a video frame corresponding to the search input.

27. A system comprising:
a first aircraft including at least one sensor;
a second aircraft including at least one sensor;
a communication station; and
a data link having a node at each of the first aircraft, the second aircraft and the communication station; wherein
the datalink conveys data from the first aircraft, to the node on the second aircraft;
the data link includes data storage arranged to store data generated by the at least one of the first and second aircraft and the data storage is located on the second aircraft;
the data link includes a search engine on the second aircraft arranged to process and transmit data stored in the data storage based on instructions received from the communication station; and
the data comprises imagery, geo-location data associated with the imagery, and time tags associated with the imagery.

28. The system of Claim 27, wherein:
the instructions include search criteria, a request to search the data and transmit portions of the data that satisfy the search criteria to the communication station; and
the data link node at the communication station comprises a graphical user interface arranged to display the instructions and the transmitted data.

29. The system of Claim 28, wherein the portion of the data are transmitted to the communication station in non-real time.

30. The system of Claim 27, wherein the imagery comprises outputs from at least one of the first and second aircraft sensors.

31. The system of Claim 27, wherein data from the first aircraft is transmitted to the communication station via the data link in real time.

32. The system of Claim 27, wherein communication station is a based on a planetary surface.

33. The system of Claim 27, wherein the data link comprises at least one processor arranged to enhance the geo-location data by integrating data from different image frames of the imagery.

34. The system of Claim 33, wherein the integration of data from different frames includes stitching spatially adjacent image frames together.

35. The system of Claim 33, wherein the processor is arranged to enhance the geo-location data and/or the imagery by integrating outputs of different sensors on the first and second aircraft.

36 The system of Claim 35, wherein the sensor outputs comprise one or more of weapon firing data, passively detected radio frequency transmissions, and radar sensing data.

37. The system of Claim 27, wherein the data link comprises at least one processor arranged to select compression modes the data based on user control inputs that control data capture by the at least one sensor on at least one of the first and second aircraft.

38. The system of Claim 37, wherein compression of the captured data using the selected compression mode is performed prior to transmission of the captured data from one of the first and second aircraft.

39. The system of Claim 37, wherein compression of the captured data using the selected compression mode is performed prior to storage of the captured data in the data storage.

40. The system of Claim 37, wherein a low latency compression mode is selected when the user control inputs that control data capture by the at least on sensor, correspond to an image variance between sequential images that exceeds a first threshold value.

41. .The system of Claim 37, wherein a high quality compression mode is selected when the user control inputs that control data capture by the at least on sensor, correspond to an image variance between sequential images that is less than a second threshold value.

42. The system of Claim 41, wherein the first and second thresholds are the same.

43. The system of Claim 27, wherein the data link node on the second aircraft comprises a transceiver is configured to exchange data with other nodes on the data link and to transmit, receive and process radar signals.